Author	Focus of Study	Study design or duration	Systems evaluated	Participants	Quality rating
Barron et al., 2014 [18]	Formative; focuses on information gathering for design and system development Does not distinguish between short-term users and adopters	Qualitative; interviews and cognitive walkthrough One-time interview and walk-through	Patient portal; system developed at Johns Hopkins University geriatric medical practice	N=33; n=14 older adults, n=19 caregivers Older adult average age: 78.6 years Gender: 50% (7/14) female	5
Gordon and Hornbrook, 2016 [19]	Use; restricts analysis to those who have logged onto a portal and viewed a lab test or used a prescription refill at least once in a calendar year Does not distinguish between short-term users and adopters	Quantitative; patient portal use study and survey Cross-sectional	Patient portal; evaluates a health plan portal	N=231,082 older adults; n=2602 survey respondents Average age: not reported; survey respondent age brackets: 23.48% (611/2602 65-69 years), 43.7% (1137/2602 70-74 years), and 32.78% (853/2602 75-79 years) Gender: 54.07% female (1407/2602)	6
Haverhals et al., 2011 [30]	Formative; focuses on information gathering for design Does not distinguish between short-term users and adopters	Qualitative; interviews and focus groups One-time interviews and focus groups	N/A; identifying health information management issues to address in development of personally managed health applications generally	N=34; n=32 older adults, n=2 caregivers Older adult average age: 82 years Gender: 60% (9/15) female	6

Hourcade et al., 2011 [22]	Formative; focuses on information gathering for design and system development Does not distinguish between short-term users and adopters	Qualitative; design sessions Twelve 1-hour sessions over 4 weeks	ePHR; Gathering design recommendations for development of a personal health record focused on medication management	N=16 older adults, residents at a retirement community; **group 1** n= 8 residents at a retirement community median age: 78 years; **group 2** n= 8 different residents at same retirement community median age: 75 years Gender: 50% (8/16) female	7
Kerai et al., 2014 [20]	Formative; looks at perceptions about initial acceptance of a portal Does not distinguish between short-term users and adopters	Quantitative; questionnaire Cross-sectional	Patient Portal; Australia's personally controlled electronic health record, which is tethered to an electronic medical record but has patient controlled sharing and visibility	N=80 older adults Older adult median age: 71 years Gender: 62% (50/80) female	8
Khan et al., 2010 [23]	Formative; focuses on information gathering for design and system development. Does not distinguish between short-term users and adopters	Qualitative; user study One-time user studies	ePHR; evaluated prototypes and a functional system—the Colorado Care Tablet	N=31; n=22 older adults, n=9 caregivers Older adult average age: 76.4 years Gender: not reported	8
Kim et al., 2009 [24]	Use and Adoption; compares frequency of use and patterns of	Mixed study; questionnaire and system use 33-month	ePHR; PHIMS	N=70 residents; n=44 older adults; residents of a low income housing complex	6

	use over a 33-month study period	longitudinal study		Older adult average age: 63.1 years Gender: 71% (50/70) female	
Lam et al., 2013 [25]	Adoption and Use; Survey measured length of use as less than a few months, a few months to 1 year, and more than 1 year. Majority of respondents used the system a few months to 1 year	Mixed; survey; comparison of older and younger adults Cross-sectional	ePHR; untethered messaging system for talking with a medical team called Vision Tree	N=372 total; n=145 older adults Older adult average age: 74.9 years Gender: not reported	7
Latulipe et al., 2015 [21]	Formative; focuses on information gathering for design Does not distinguish between short-term users and adopters	Qualitative One-time interview	Patient portal; no specific system evaluated	N=52; n=36 patients, n=16 caregivers, n=23 patients over age 65 years Older adult average age: not reported Gender: 57% (13/23) female	7
Lober et al., 2006 [26]	Use; examines barriers to initial use and participants' feelings about the personal health information management system (PHIMS) Does not distinguish between short-term users and adopters	Mixed study; observations and survey 6-month longitudinal study	Electronic personal health record (ePHR); PHIMS	N=38 older adults; residents of a low income housing complex Older adult average age: 69 years Gender: 82% (31/38) female	5

Logue and Effken, 2012 [27]	Use; looks at factors influencing initial use Does not distinguish between short-term users and adopters	Quantitative; descriptive survey Cross-sectional	ePHRs; no specific system evaluated	N=38 older adults; residents of two retirement communities Older adult average age: 77 years Gender: 71% (25/35) female	7
Montelius et al., 2008 [31]	Use; examines reasons for initial use and feelings about the website Does not distinguish between short-term users and adopters	Quantitative; Web-based survey; comparison of older and younger adults Cross-sectional	Not applicable (N/A); Swedish Government operated, Webbased medication list: "My Dispensed Medications"	N=1716 total; n= 225 older adults Older adult average age: not reported 13.11% (225/1716) of total are 65 years or older Gender: 78.67% (177/225) female	7
Price et al., 2013 [28]	Formative; focuses on information gathering for design Does not distinguish between short-term users and adopters	Qualitative; diary method and interviews; comparison of older and younger adults 2-week diary; one-time interview	ePHR; no specific system evaluated	N=72; **study 1:** n= 24 older adults; average age: 72 years **study 2:** n=12 older adults; average age:74 Some of the participants in the first study were also in the second study. Gender: not reported	8
Sack et al., 2011 [29]	Use; examines reasons for initial use and the perceived cost and benefits of systems Does not distinguish between short-term users and adopters.	Qualitative; focus groups One-time focus group	ePHR; comparing Google Health accessed through a Web-based and mobile app	N=26 older adults Older adult average age: 71 years Gender: not reported	6

Taha et al., 2014 [9]	Formative; focuses on information gathering for design Does not distinguish between short-term users and adopters	Mixed study; questionnaires and user study cross-sectional survey and one-time evaluation	Patient portal; simulated system called CREATE	N=51 older adults Older adult average age: 69.31 years Gender: 60.8% (31/51) female	8
Turner et al., 2015 [10]	Formative; focuses on information gathering for design Does not distinguish between short-term users and adopters	Qualitative; comparison of portal users to portal nonusers One-time interview	Patient portal; no specific system evaluated	N=74 older adults **Portal user:** average age: 76 years ; **Portal nonuser:** average age: 78 years Gender: Portal user 87% (13/15) female; Portal nonuser 59% (35/59) female	7
Zettel-Watson and Tsukerman, 2016 [17]	Adoption and use; measured length of time using system, which ranged from 1 month to 10 years, with an average of 3 years	Quantitative; survey; comparison of portal users to portal nonusers Cross-sectional	Looks at Web-based health management tools and does not distinguish between ePHR and patient portal; no specific system evaluated	N=166 older adults; portal users n=62, portal nonusers n=104 average age: **portal user:** 68.5 years; **portal nonuser:** 72.2 years Gender: portal user 72.6% (45/62) female; portal nonuser 55.9% (58/104) female	6

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